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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,229	12/14/2001	James M. Irion II	004578.1140	3727

5073 7590 06/05/2003

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EXAMINER

PHAN, THO GIA

ART UNIT PAPER NUMBER

2821

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/023,229

Applicant(s)

IRION ET AL.

Examin r

Tho G. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-13, 15, 16, 22, 23 and 25 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7, 8, 17 and 18 is/are rejected.
- 7) ☒ Claim(s) 3-6, 14, 19-21 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-3, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification and the claims.

Claim Objections

1. Claims 14, 21 and 24 are objected to because of the following informalities:

In claim 14, line 9, "dielectric" should be changed to --conductive--.

In claim 14, line 12, "slot portions" should be changed to --slot portion--.

In claim 21, line 2, "having" should be inserted after --section--.

In claim 24, line 9, "dielectric" should be changed to --conductive--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. Claims 2 and 18 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, line 19, the language, "said conductive material" lacks a proper antecedent basis.

In claim 18, line 18, the language, "said conductive material" lacks a proper antecedent basis.

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Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 7-8 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlberg (6,414,645) in view of Fleming et al (6,538,614).

Dahlberg in figures 5-11 discloses an apparatus comprising a dielectric layer 40 having a hole 46 therethrough, an electrically conductive layer 44 disposed adjacent one side of the dielectric layer, the conductive layer having a recess therein which includes a slot portion (along inner notch portion 68, see figures 5 and 9), and an elongate conductive element 54 which extends generally transversely with respect to the slot portion in the region of the one end thereof. Dahlberg has been discussed but fails to expressly teach a balun portion. However, Fleming et al in figure 1 disclose a balun portion 50. It would have been obvious to one of an ordinary skill in the art at the time the invention was made to employ the balun portion as taught by Fleming et al. for the purpose of interfacing a balanced impedance, with an unbalanced impedance (see column 1, lines 9-11).

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Allowable Subject Matter

5. Claims 9-13, 15-16, 22-23 and 25 are allowed.
6. Claims 3-6 and 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Claims 14, 21 and 24 will be allowed upon obviating the above objection.
8. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

None of the reference discloses a further balun portion and including a further slot portion which communicates at one end with the further balun portion; the slot portion communicating at one end with the balun portion, the balun portion having a shape which facilitates a large and abrupt discontinuity in impedance between the slot portion and the balun portion; first, second and third conductive layers which extend parallel to each other and to the dielectric layers, the first dielectric layer being located between the first and second conductive layers and the second dielectric layer being located between the second and third conductive layers, the conductive layers each having therein a recess

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which includes a balun portion and a slot portion communicating at one end with the balun portion thereof, and etc...

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patents to Schnetzer and Bitter are cited as of interest and illustrate a similar structure to notch antenna assembly.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner THO G. PHAN whose telephone number is (703) 308-3051.

11. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0956.

12. Papers related to Technology Center 2800 applications **only** may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30

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(November 15, 1989). The Technology Center Fax Center number is (703) 308-7722 or
(703) 308-7724.

A handwritten signature in black ink, consisting of a stylized 'T' and 'P' followed by a long horizontal line extending to the right.

THO G. PHAN

Patent Examiner

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May 30, 2003